

AIR QUALITY PERMIT

Issued To:	Burlington Northern Santa Fe Railway Company P.O. Box 1267 Whitefish, MT 59937	Permit: #3243-00 Application Complete: 03/10/03 Preliminary Determination Issued: 04/08/03 Department's Decision Issued: 04/24/03 Permit Final: 05/10/03 AFS: #053-0015
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An air quality permit, with conditions, is hereby granted to the Burlington Northern Santa Fe Railway Company (BNSF), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Permitted Equipment

BNSF owns and operates a railroad tunnel ventilation facility that is known as the BNSF Flathead Tunnel Ventilation System. The facility consists of 3 emergency/backup generators used to provide power to the ventilation system when the usual source of power is unavailable. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

B. Plant Location

BNSF's Flathead Tunnel is located approximately 10 miles south of Trego, Montana. The emergency/backup generators are located at the east Portal of the Flathead Tunnel. The legal description of the facility is Section 8, Township 32 North, Range 24 West, in Lincoln County Montana.

SECTION II. Conditions and Limitations

A. Emission Limitations

1. BNSF shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6-consecutive minutes (ARM 17.8.304).
2. BNSF shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
3. BNSF shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.2 (ARM 17.8.749).
4. The hours of operation of each of the diesel generators (two 2,000 kilowatt (kW) and one 300 kW) shall not exceed 500 hours during any rolling 12-month time period (ARM 17.8.749).

B. Testing Requirements

1. The Department of Environmental Quality (Department) may require testing (ARM 17.8.105).
2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

C. Operational Reporting Requirements

1. BNSF shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. BNSF shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745(l), that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit.

The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by BNSF as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).
4. BNSF shall document, by month, the hours of operation of each of the emergency/backup diesel generators (two 2,000 kW and one 300 kW). By the 25th day of each month, BNSF shall total the hours of operation of each of the emergency/backup diesel generators during the previous 12 months to verify compliance with the limitation in Section II.A.4. A written report of the compliance verification shall be submitted along with annual emission inventory (ARM 17.8.749).

D. Notification

BNSF shall provide the Department with written notification of the following dates within the specified time periods:

1. Commencement of installing the emergency/backup diesel generators within 30 days after commencement of installing the emergency/backup diesel generators; and

2. Completion of installation of the emergency/backup diesel generators within 30 days of completion of installation of the emergency/backup diesel generators.

SECTION III: General Conditions

- A. Inspection – BNSF shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if BNSF fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving BNSF of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department’s decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy the air quality permit shall be made available for inspection by the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by BNSF may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
Burlington Northern Santa Fe Railway Company
Permit #3243-00

I. Introduction/Process Description

A. Permitted Equipment

The Burlington Northern Santa Fe Railway Company (BNSF) owns and operates a railroad tunnel ventilation facility that is known as the BNSF Flathead Tunnel Ventilation System. The facility consists of the following permitted equipment:

1. Two 2,000 kilowatt (kW) generators powered by Caterpillar 3516B Diesel Engines
2. One 300 kW generator powered by a Caterpillar 3406C Diesel Engine

B. Source Description

The BNSF Flathead Tunnel Ventilation System is located at the east portal of the BNSF Flathead tunnel. The facility is located approximately 10 miles south of Trego, Montana. The legal description of the facility is Section 8, Township 32 North, Range 24 West, in Lincoln County Montana. The ventilation system expels train exhaust from the tunnel to prevent the atmosphere within the tunnel from becoming explosive. The ventilation system is electrically powered and the usual source of electricity is provided via standard power lines. The facility consists of three emergency/backup generators to provide power to the ventilation system when the usual source of power is unavailable.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

BNSF shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

BNSF must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, BNSF shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
 6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
 7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR 60.
- D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:
1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 2. ARM 17.8.402 Requirements. BNSF must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed heights of the new or altered stacks for the ventilation system are below the allowable 65-meter GEP stack height.
- E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:
1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. BNSF submitted the appropriate permit application fee for the current permit action.
 2. ARM 17.8.505 When Permit Required--Exclusions. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.
- An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.
- F. ARM 17.8, Subchapter 7 – Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain an air quality permit or permit alteration if they construct, alter or use any air contaminant sources that have the potential to emit greater than 25 tons per year of any pollutant. The BNSF Flathead Tunnel Ventilation System has the potential to emit more than 25 tons per year of NO_x; therefore, an air quality permit is required.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that are not subject to the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. This rule requires that a permit application be submitted prior to installation, alteration or use of a source. BNSF submitted the required permit application for the current permit action.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that Best Available Control Technology (BACT) shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving BNSF of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Act, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. A source may not increase its emissions beyond those found in its permit unless the source applies for and receives another permit.
 14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.
- G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
 2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's potential to emit is below 250 tons per year of any pollutant (excluding fugitive emissions).

- H. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:
1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. Potential to Emit (PTE) greater than 100 tons/year of any pollutant;
 - b. PTE greater than 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE greater than 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE greater than 70 tons/year of PM₁₀ in a serious PM₁₀ nonattainment area.
 2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3243-00 for BNSF, the following conclusions were made.
 - a. The facility's PTE is less than 100 tons/year for any pollutant.
 - b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.

- d. This facility is not subject to any current NSPS.
- e. This facility is not subject to any current NESHAP standards.
- f. This source is not a Title IV affected source, nor a solid waste combustion unit.
- g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that BNSF will be a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each new or altered source. BNSF shall install on the new or altered source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized. The following control options were reviewed by the Department to make the following BACT determination.

A. NO_x Emissions

NO_x emissions from the proposed emergency/backup generators will be produced primarily by thermal NO_x formation with some influence by prompt NO_x and possibly some influence from fuel NO_x. However, most distillate oils have no chemically-bound N₂ and essentially all NO_x formed is thermal NO_x. Thermal NO_x results when the intense heat of combustion causes atmospheric nitrogen N₂ to combine with atmospheric oxygen O₂ in the combustion air. Most thermal NO_x is formed in the high-temperature region of the flame from dissociated molecular N₂ in the combustion air.

The Department reviewed the following NO_x control strategies/technologies for the current permit action:

- Combustion Modifications
- Selective Catalytic Reduction (SCR)
- Non-Selective Catalytic Reduction (NSCR)
- No Additional Control - Proper Design and Operation

Combustion Modifications

Several combustion modification strategies are available for controlling NO_x emissions from diesel reciprocating engines. Injection timing retard (ITR), preignition chamber combustion (PCC), air-to-fuel ratio adjustments, and derating all function by modifying the combustion zone air-to-fuel ratio, thus influencing O₂ availability and peak flame temperature by delaying the onset of combustion. In reviewing previous BACT analyses for emergency/backup generators, the Department determined that the cost-effectiveness of combustion modifications are above industry norms and will not constitute BACT in this case. Combustion modifications have not been required of other recently permitted similar sources.

Selective Catalytic Reduction (SCR)

SCR is a post-combustion gas treatment technique for the catalytic reduction of NO and NO₂ to molecular nitrogen, water, and O₂ in the engine exhaust stream. In the SCR process, NH₃ or urea (the most commonly used reducing agents), are injected into the exhaust gas upstream of a

catalyst bed. NO_x and NH_3 form ammonium salts at the catalysts that subsequently decompose to produce elemental nitrogen and water. The catalyst lowers the temperature required for the chemical reaction between NO_x and NH_3 . Commonly, the catalyst is a mixture of titanium and vanadium oxides. Technical factors that impact the effectiveness of this technology include the catalyst reactor design, operating temperature, type of fuel fired, sulfur content of the fuel, design of the NH_3 injection system, and the potential for catalyst poisoning. Removal efficiencies range from 50-90%. Technical feasibility is questionable for the application of SCR on diesel engines and in reviewing previous BACT analyses for emergency/backup diesel generators and considering the relatively low allowable NO_x emissions from the proposed emergency/backup diesel generators, the Department determined that the cost-effectiveness of SCR would be above industry norms and will not constitute BACT in this case. SCR has not been required of other recently permitted similar sources.

Non-Selective Catalytic Reduction (NSCR)

NSCR uses a three-way catalyst to promote the decomposition of NO_x to nitrogen and water. Exhaust CO and hydrocarbons are simultaneously oxidized to CO_2 and water in this process. NSCR requires low excess oxygen for the catalyst to function. NSCR is only applicable to fuel-rich burning engines, and diesel fueled engines cannot be operated fuel-rich. Therefore, the Department determined that NSCR will not constitute BACT in this case.

No additional Control - Proper Design and Combustion

No additional controls – proper design and combustion was proposed as BACT by BNSF. This option consists of not implementing any control technologies/strategies and operating the emergency/backup generators as they were designed to be operated (low sulfur fuel (diesel) and less than 500 hours per year). Therefore, the Department determined that the proper installation and operation of the emergency/backup generators shall constitute BACT in this case.

B. CO Emissions

In an ideal combustion process, all of the carbon and hydrogen contained within the fuel are oxidized to form carbon dioxide (CO_2) and water (H_2O). Emission of CO in a combustion process is the result of incomplete organic fuel combustion. CO emissions can be caused by poor fuel-air mixing, flame quenching, and low residence time.

The following CO control strategies/technologies were reviewed for the current permit action:

- Oxidation of Post Combustion Gases
- No Additional Control – Proper Design and Operation

Oxidation

Oxidation controls ideally break down the molecular structure of an organic compound into CO_2 and water vapor. Temperature, residence time, and turbulence of the system affect CO control efficiency. Incinerators or oxidizers have the potential for very high CO control efficiency; however, this efficiency comes at the expense of increasing NO_x production. A thermal incinerator operates at temperatures between 1450 and 1600 degrees Fahrenheit ($^{\circ}\text{F}$). Catalytic incineration is similar to thermal incineration; however, catalytic incineration allows for oxidation at temperatures ranging from 600 to 1000 $^{\circ}\text{F}$. The catalyst systems that are used are typically metal oxides such as nickel oxide, copper oxide, manganese oxide, or chromium oxide. Due to the high temperatures

required for complete destruction, fuel costs can be expensive and fuel consumption can be excessive with oxidation units. To lower fuel usage, regenerative thermal oxidizers (RTOs) or regenerative catalytic oxidizers (RCOs) can be used to preheat contaminated process air in a heat recovery chamber. In reviewing previous BACT analyses for emergency/backup diesel generators and considering the relatively small amount of CO emissions from the proposed emergency/backup diesel generators, the Department determined that the cost-effectiveness of oxidation of post combustion gases would be above industry norms and will not constitute BACT in this case. Oxidation of post combustion gases has not been required of other recently permitted similar sources.

Proper Design and Combustion

No additional controls – proper design and combustion was proposed as BACT by BNSF. This option consists of not implementing any control technologies/strategies and operating the emergency/backup generators as they were designed to be operated (low sulfur fuel (diesel) and less than 500 hours per year). Therefore, the Department determined that the proper installation and operation of the emergency/backup generators shall constitute BACT in this case.

C. Summary

The Department determined that no additional control, using good combustion practices, will constitute BACT for NO_x and CO emissions resulting from the operation of the proposed emergency/backup diesel generators.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

Source #	Source	Tons/Year				
		PM ₁₀	NO _x	CO	VOC	SO _x
01	2,000 kW Caterpillar diesel generator	0.20	15.10	1.12	0.37	8.73
02	2,000 kW Caterpillar diesel generator	0.20	15.10	1.12	0.37	8.73
03	300 kW Caterpillar diesel generator	0.21	2.33	0.70	0.04	0.23
Totals		0.61	32.53	2.94	0.78	17.69

- A complete emission inventory for Permit #3243-00 is on file with the Department.

V. Existing Air Quality

The facility is located in Section 8, Township 32 North, Range 26 West in Lincoln County, Montana. The air quality of this area is classified as either Better than National Standards or unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

VI. Ambient Air Impact Analysis

In the view of the Department, the amount of controlled emissions from this facility will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air and Waste management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Burlington Northern Santa Fe Railway Company
P.O. Box 1267
Whitefish, Montana 59937

Air Quality Permit number: 3243-00

Preliminary Determination Issued: 04/08/03

Department Decision Issued: 04/24/03

Permit Final: 05/10/03

1. *Legal Description of Site:* The BNSF Flathead Tunnel Ventilation System is located at the east portal of the Flathead Tunnel. The facility is located approximately 10 miles south of Trego, Montana. The legal description is Section 8, Township 32 North, Range 26 West in Lincoln County, Montana.
2. *Description of Project:* BNSF proposes to install three emergency/backup generators (two 2,000 kW and one 300 kW) at the BNSF Flathead Tunnel. The existing generators (a 2,000 kW and a 400 kW) would be replaced by the proposed generators.
3. *Objectives of Project:* The proposed generators would provide emergency/backup power to the ventilation system when the usual source of power is unavailable. The ventilation system expels train exhaust from the tunnel to prevent the atmosphere within the tunnel from becoming explosive.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because BNSF demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the “no-action” alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis, would be included in Permit #3243-00.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic life and Habitats

Minor, if any, impacts would be expected on terrestrial or aquatic life and habitats from the proposed project because the proposed project would take place at an existing facility. 4,300 kW of total generator capacity would be replacing 2,375 kW of total generator capacity. The change in generator capacity would result in only a minor increase in the potential to emit of the facility and the facility’s potential to emit is small by industrial standards. While potential emissions from the facility would increase and corresponding deposition of pollutants would occur, as described in Section 7.F. of this EA, the Department determined that, due to dispersion characteristics of pollutants and the atmosphere, and conditions that would be placed in Permit #3243-00, the chance of deposition of pollutants impacting terrestrial and aquatic life and habitats would be minor. In addition, the generators would be for emergencies and would be operated sparingly. Further, the site is built on fill material from the tunnel excavation and only minor construction would be required for the project.

B. Water Quality, Quantity and Distribution

Minor, if any, impacts would be expected on water quality, quantity and distribution from the proposed project because the proposed project would take place at an existing facility. 4,300 kW of total generator capacity would be replacing 2,200 kW of total generator capacity. There are several small creeks in the area of the project, with Fortine creek being the closest. Fortine creek parallels the railway. However, the change in generator capacity would result in only a minor increase in the potential to emit of the facility and the facility’s potential to emit is small by industrial standards. While potential emissions from the facility would increase and corresponding deposition of pollutants would occur, as described in Section 7.F. of this EA, the Department determined that, due to dispersion characteristics of pollutants and the atmosphere, and conditions that would be placed in Permit #3243-00, the chance of deposition of pollutants

impacting water quality, quantity and distribution would be minor. In addition, the generators would be for emergencies and would be operated sparingly. Further, the site is built on fill material from the tunnel excavation and only minor construction would be required for the project.

C. Geology and Soil Quality, Stability and Moisture

Minor, if any, impacts would occur on the geology and soil quality, stability, and moisture from the proposed project because only minor construction would be required to complete the project. In addition, the site is built on fill material from the tunnel excavation. Further, while deposition of pollutants would occur, as described in Section 7.F of this EA, the Department determined that the chance of deposition of pollutants impacting the geology and soil in the areas surrounding the site would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in Permit #3243-00.

D. Vegetation Cover, Quantity, and Quality

Minor, if any, impacts would occur on vegetation cover, quantity, and quality because only minor construction would be required to complete the project. In addition, the site is built on fill material from the tunnel excavation. Further, while deposition of pollutants would occur, as described in Section 7.F of this EA, the Department determined that the chance of deposition of pollutants impacting the geology and soil in the areas surrounding the site would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in Permit #3243-00.

E. Aesthetics

Minor impacts would result on the aesthetics of the area because a new canopy would be constructed to house the proposed generators and a new building would be constructed to house the controls. Aesthetic impacts would be minor because this is an existing facility and construction would take place within the fenced property.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because potential emissions would increase due to replacing the 2,200 kW of existing total generator capacity with 4,300 kW of total generator capacity. Air emissions from the facility would be minimized by conditions that would be placed in Permit #3243-00. Conditions would include, but would not be limited to, opacity limitations on the proposed generators and the general facility and an hours of operation limitation of 500 hours per any rolling 12-month time period on each of the proposed generators. While deposition of pollutants would continue to occur as a result of operating the proposed emergency/backup generators, the Department determined that any air quality impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.), the atmosphere (wind speed, wind direction, ambient temperature, etc.), conditions that would be placed in Permit #3243-00, and the fact that the generators would be used sparingly for emergency situations.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The NRIS search identified seven species of special concern

(Gray Wolf, Lynx, Sheathed Sedge, Round-Leaved Orchis, Sparrow's-Egg Lady's-slipper, Nountain Moonwort, and Wavey Moonwort) in the vicinity of the project area. In this case, the area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. Due to the minor amounts of construction that would be required, the low levels of pollutants that would be emitted by the proposed project, dispersion characteristics of pollutants and the atmosphere, and conditions that would be placed in Permit #3243-00, the Department determined that the chance of the project impacting any species of special concern would be minor.

H. Demands on Environmental Resource of Water, Air and Energy

The proposed project would have minor, if any, impacts on the demands on environmental resources of air and water because the proposed project would increase potential emissions from the facility. However, the change in generator capacity would result in only a minor increase in the potential to emit of the facility and the facility's potential to emit is small by industrial standards. While deposition of pollutants would occur, as explained in Section 7.F of this EA, the Department determined that the chance of the proposed project impacting demands on air and water resources would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in Permit #3243-00. The proposed project would be expected to have only minor impacts on the demand on the environmental resource of energy because of the increased capacity of the proposed generators. Overall, the impacts on the demands on environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to the SHPO records, there have not been any previously recorded historic or archaeological sites within the proposed area. SHPO stated that because the project would be occurring on previously disturbed ground that there would be low likelihood cultural properties would be impacted; therefore, the Department determined that the chance of the project impacting any historical and archaeological sites in the area would be minor.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area would be minor due to the relatively small size of the project. Potential emissions from the facility are very small by industrial standards and the emergency/backup generators would only be operated when the usual power supply is unavailable (less than 500 hours per year). The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in Permit #3236-00.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production			X			Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment				X		Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity				X		Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECENOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed project would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the proposed project would take place at an existing facility. In addition, the facility is located in a remote location with the nearest community being located approximately 10 miles northeast of the facility.

B. Cultural Uniqueness and Diversity

The cultural uniqueness and diversity of the area would remain unchanged from the proposed project (no impact) because the proposed project would take place at an existing facility. In addition, the facility is located in a remote location with the nearest community being located approximately 10 miles northeast of the facility.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in minor, if any, impacts to the local and state tax base and tax revenue because the proposed project would not require new permanent employees to be hired. In addition, only minor amounts of construction would be needed to complete the project.

D. Agricultural or Industrial Production

The proposed project would not result in any impacts to agricultural or industrial production because the proposed project would not displace any agricultural or industrial land. The proposed project would take place at an existing facility and the minor amounts of construction that would take place to complete the project would occur within the fenced property, which is located on fill material

from the tunnel excavation. While air emissions would continue to occur, as Section 7.F of this EA explains, the Department determined that the chance of deposition of pollutants impacting agricultural or industrial production in the areas surrounding the site would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in Permit #3243-00.

E. Human Health

The proposed project would result in only minor impacts to human health because of the relatively small increase in potential emissions. As explained in Section 7.F of this EA, deposition of pollutants would continue to occur; however, the Department determined that the proposed project, permitted by Permit #3243-00, would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would not have any impacts on access to recreational and wilderness activities because the project would take place at an existing facility. The quality of recreational and wilderness activities would not be impacted because of the relatively small increase in potential emissions. In addition, the emergency/backup generators would only operate when the usual source of power is unavailable (less than 500 hours per year).

G. Quantity and Distribution of Employment

The proposed project would not affect the quantity and distribution of employment because no permanent employees would be hired as a result of the proposed project. Also, no new construction-related positions would result from this project because only minor amounts of construction would be required to complete the project.

H. Distribution of Population

The proposed project would not affect distribution of population in the area because the facility is an existing facility and the proposed project would not create any new permanent employment that would cause an increase in population in the area. In addition, the proposed project would not have impacts that would cause a decrease in the distribution of population in the area because the site is an existing facility and the proposed project would only cause a relatively small increase in potential emissions.

I. Demands for Government Services

There would be minor impacts on demands of government services because additional time (would be required by government agencies to assure compliance with applicable rules, standards, and Permit #3243-00.

J. Industrial and Commercial Activity

No impacts would be expected on the local industrial and commercial activity because the proposed project would take place at an existing facility. The proposed project would not result in an increase or decrease in the industrial or commercial activity in the area.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals that would be affected by issuing Permit #3243-00. The state standards would protect the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social aspects of the human environment in the immediate area due to the relatively small size of the operation. Due to the relatively small size of the project, the industrial production, employment, and tax revenue (etc.) would not be significantly impacted by the proposed project. In addition, the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3243-00.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the construction and operation of three emergency/backup generators at an existing facility. Permit #3243-00 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air and Waste management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

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